REMARKS

Claims 1-23 and 100-144 have been cancelled without prejudice and may therefore form the basis for a divisional application. Claims 24-25, 30-46 and 51-80 have been amended; and claims 145 and 146 have been added. Accordingly, upon entry of the above amendments, claims 24-99, 145 and 146 remain pending in the application.

Attached hereto is a marked-up version of the claim amendments, wherein any additions have been underlined and any deleted matter has been bracketed.

Rejection Under 35 U.S.C. 112

Claims 24-99 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the Examiner has stated that "the claim limitations of 'high m.p.' and 'low m.p.' are not given any patentable weight when not defined by finite numbers."

The basis for the rejection has been obviated by the above amendments, in which reference to "high m.p." and "low m.p." thermoplastic synthetic resin films have been replaced with "first" and "second" thermoplastic synthetic resin films.

In view of the above amendments, it is respectfully submitted that the rejection under 35 U.S.C. § 112 has been overcome.

Prior Art Rejection

Claims 24-29 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Iioka et al. (U.S. Patent No. 5,490,631) in view of Herman et al. (Encyclopedia of Polymer Science and Technology, Volume 6, Pages 412 and 413). Briefly, the Examiner has taken the position that it would have been obvious to one having ordinary skill in the art to have printed the

ink on top of the foam insulated area as a variation of the design of Iioka et al. since printing on top of the foamed insulation is well known in the art.

Applicants respectfully disagree with the rejection. In particular it is submitted that those having ordinary skill in the art would not have been motivated to modify the design of Iioka et al. by applying the ink over the outer exposed surface of the foam insulation rather than between the paper base and the foam insulation as expressly taught by Iioka et al. To the contrary, those having ordinary skill in the art when considering the entire content of the Iioka patent would find express teachings in the reference against the modification suggested by the Examiner.

The paper containers disclosed by the Iioka et al. patent are characterized by a heat-insulating layer having areas of different thicknesses. It is stated (column 1, lines 18-20) that an object of the invention "is to provide a heat-insulating paper container having a foamed layer that differs in thickness from one portion to another." This object is attained with a heat-insulating paper that is said (at column 2, lines 21-30) to be "characterized in that part of the outer surface of said body member is provided with printing of an organic solvent based ink, wherein a thick foamed heat-insulating layer that is made of a thermoplastic synthetic resin is formed in the printed area of said outer surface whereas a less thick foamed heat-insulating layer that is made of the same thermoplastic synthetic resin film is formed in the non-printed area of said outer surface." The formation of the thick foamed heat-insulating layer is explained (column 2, lines 38-44) as follows: "the residual solvent or solvent in the printing ink and other ink components such as pigment combine to lower the strength of adhesion of the thermoplastic synthetic resin film in the paper sheet, whereupon the film in the printed area is foamed at an accelerated rate to form a thick foamed heat-insulating layer."

The Iioka et al. patent is clearly teaching that the object of the invention (a foamed insulation layer having portions of differing thicknesses) is achieved by printing a solvent based ink <u>onto the base paper layer</u> so that the ink is located <u>between the base paper layer and the foamable thermoplastic synthetic resin film layer</u>, whereby the pigment in the ink lowers the

strength of adhesion of the thermoplastic synthetic resin film to the paper sheet. Thus, the primary reference expressly teaches that the ink must be between the paper and the expandable synthetic resin layer in order to attain the objectives of the invention.

It is respectfully submitted that those having ordinary skill in the art would not be motivated to modify the teachings of a prior art reference in such manner that the objectives of the invention are unattainable. If a proposed modification would render the prior art invention unsatisfactory for its intended purpose, then there is not any suggestion or motivation to make the purposed modification. *In re Gordon*, 733 F2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Accordingly, the rejection, which is based on the conclusion that it would have been obvious to one having ordinary skill in the art to modify the design of Iioka et al. by printing the ink on top of the foam insulation, is contrary to the teachings of Iioka et al., and would defeat the purpose of the invention described by Iioka et al., such that withdrawal of the rejection is most appropriate.

Further, the claims require an ink which follows the expansion of the second (low melting point) thermoplastic synthetic resin film. The Iioka et al. patent does not teach or suggest use of an ink that follows the expansion of the expandable thermoplastic film. Not all inks are capable of following the expansion of a thermoplastic film that will expand upon heat treatment. In the specification (page 12, lines 1-12) it is disclosed that an ink which follows the expansion of the low melting point thermoplastic film is a resinous composition that contains an amount of residual solvent as small as possible. Iioka et al. do not teach or suggest, and do not require, use of an ink that follows the expansion of the foamable thermoplastic film. Further, rather than teaching an amount of residual solvent as small as possible, the Iioka et al. patent teaches an ink that contains "large amounts of toluene, methyl ethyl ketone, methyl isobutyl ketone and other solvents that are less prone to evaporate during drying."

For all of the reasons set forth above, it is respectfully submitted that the Iioka et al. patent in view of Herman et al. does not teach or suggest the claimed invention wherein an ink

which follows the expansion of a foamable thermoplastic film is applied to an outer surface of a foamable thermoplastic film laminated on a base paper. Therefore, the rejection under 35 U.S.C. § 103 based on the teachings of Iioka et al. in view of Herman et al. is improper such that withdrawal of the rejection is most appropriate.

New Claims

New claims 145 and 146 have been added to encompass patentable subject matter described and enabled by the original application. Support for these claims can be found on page 12 of the specification at lines 27-28 which disclose that the low melting point synthetic resin has a melting point of 105°C-110°C, and on page 12 at lines 18-20 which state that the high melting point synthetic resin has a melting point of 130°C-135°C.

CONCLUSION

In view of the above amendments and remarks, it is respectfully submitted that the application is in condition for allowance and notice of the same is earnestly solicited.

Respectfully submitted,

WATANABE ET AL.

By: Price, Heneveld, Cooper, DeWitt & Litton

October 18, 2001
Date

Gunther J. Evanina

Gunther J. Evanina
Registration No. 35 502
695 Kenmoor, S.E.
Post Office Box 2567
Grand Rapids, Michigan 49501
(616) 949-9610

GJE/daw
KIK01 P-318

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 24-25, 30-46 and 51-80 have been amended as follows:

24. (Twice Amended) Stock material for a container body of an insulating paper container, said stock material comprising:

base paper;

a [high m.p.] first thermoplastic synthetic resin film laminated on the inner wall surface of said base paper;

a [low m.p.] second thermoplastic synthetic resin film laminated on the outer wall surface of said base paper wherein said [low m.p.] second thermoplastic synthetic resin film is expandable by heat treatment; and

ink, which follows the expansion of said [low m.p.] second thermoplastic film, [is applied] on an outer surface of said [low m.p.] second thermoplastic synthetic resin film.

25. (Twice Amended) Stock material according to claim 24, wherein said compatibly expansile ink is applied on the upper surface of the [low m.p.] second thermoplastic synthetic resin film being expandable by heat treatment as a primer.

30. (Amended) The stock material according to claim 24, wherein an interface defined between the base paper and the [low m.p.] second thermoplastic synthetic resin film is at least partially filled with a layer of self-expansile ink.

31. (Amended) The stock material according to claim 25, wherein an interface defined between the base paper and the [low m.p.] second thermoplastic synthetic resin film is at least partially filled with a layer of self-expansile ink.

32. (Amended) The stock material according to claim 26, wherein an interface defined between the base paper and the [low m.p.] second thermoplastic synthetic resin film is at least partially filled with a layer of self-expansile ink.

33. (Amended) The stock material according to claim 27, wherein an interface defined between the base paper and the [low m.p.] second thermoplastic synthetic resin film is at least partially filled with a layer of self-expansile ink.

34. (Amended) The stock material according to claim 24, wherein the [low m.p.] second thermoplastic synthetic resin film being expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 - 15 g/10 min and a thickness of 0.03 - 0.07 mm.

35. (Amended) The stock material according to claim 25, wherein the [low m.p.] second thermoplastic synthetic resin film being expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 - 15 g/10 min and a thickness of 0.03 - 0.07 mm.

36. (Amended) The stock material according to claim 26, wherein the [low m.p.] second thermoplastic synthetic resin film being expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 - 15 g/10 min and a thickness of 0.03 - 0.07 mm.

37. (Amended) The stock material according to claim 27, wherein the [low m.p.] second thermoplastic synthetic resin film being expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 - 15 g/10 min and a thickness of 0.03 - 0.07 mm.

38. (Amended) The stock material according to claim 30, wherein the [low m.p.] second thermoplastic synthetic resin film being expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 - 15 g/10 min and a thickness of 0.03 - 0.07 mm.

39. (Amended) The stock material according to claim 24, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium density polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

40. (Amended) The stock material according to claim 25, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium density polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

41. (Amended) The stock material according to claim 26, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium density polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

42. (Amended) The stock material according to claim 27, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium density polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

43. (Amended) The stock material according to claim 30, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium density polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

44. (Amended) The stock material according to claim 34, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium density polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

45. (Twice Amended) An insulating paper container generally comprising a container body and a bottom wall, said insulating paper container further comprising:

a [high m.p.] first thermoplastic synthetic resin film laminated on the inner wall surface of a base paper for said container body and said bottom wall;

a [low m.p.] second thermoplastic synthetic resin film laminated on the outer wall surface of said base paper for said container body;

ink, which follows the expansion of said [low m.p.] second thermoplastic synthetic resin film, on the outer surface of said second thermoplastic synthetic resin film so that said ink may follow expansion of said [low m.p.] second thermoplastic synthetic resin film; and

wherein said [low m.p.] second thermoplastic synthetic resin film is expanded [by subjecting the lamination to heating treatment].

46. (Twice Amended) The insulating paper container according to claim 45, wherein the upper surface of the [low m.p.] second thermoplastic synthetic resin film being expandable by heating treatment is applied with said ink as primer.

51. (Amended) The insulating paper container according to claim 45, wherein an interface defined between the base paper and the [low m.p.] second thermoplastic synthetic resin film is at least partially filled with self-expansile ink.

52. (Amended) The insulating paper container according to claim 46, wherein an interface defined between the base paper and the [low m.p.] second thermoplastic synthetic resin film is at least partially filled with self-expansile ink.

53. (Amended) The insulating paper container according to claim 47, wherein an interface defined between the base paper and the [low m.p.] second thermoplastic synthetic resin film is at least partially filled with self-expansile ink.

54. (Amended) The insulating paper container according to claim 48, wherein an interface defined between the base paper and the [low m.p.] second thermoplastic synthetic resin film is at least partially filled with self-expansile ink.

55. (Amended) The insulating paper container according to claim 45, wherein the [low m.p.] second thermoplastic synthetic resin film is laminated on the outer wall surface of the base paper for the bottom wall and said [low m.p.] second thermoplastic synthetic resin film is expanded by subjecting the lamination to heating treatment.

56. (Amended) The insulating paper container according to claim 46, wherein the [low m.p.] second thermoplastic synthetic resin film is laminated on the outer wall surface of the base paper for the bottom wall and said [low m.p.] second thermoplastic synthetic resin film is expanded by subjecting the lamination to heating treatment.

57. (Amended) The insulating paper container according to claim 47, wherein the [low m.p.] second thermoplastic synthetic resin film is laminated on the outer wall surface of the base paper for the bottom wall and said [low m.p.] second thermoplastic synthetic resin film is expanded by subjecting the lamination to heating treatment.

58. (Amended) The insulating paper container according to claim 48, wherein the [low m.p.] second thermoplastic synthetic resin film is laminated on the outer wall surface of the base paper for the bottom wall and said [low m.p.] second thermoplastic synthetic resin film is expanded by subjecting the lamination to heating treatment.

59. (Amended) The insulating paper container according to claim 51, wherein the [low m.p.] second thermoplastic synthetic resin film is laminated on the outer wall surface of the base paper for the bottom wall and said [low m.p.] second thermoplastic synthetic resin film is expanded by subjecting the lamination to heating treatment.

60. (Amended) The insulating paper container according to claim 45, wherein the [low m.p.] second thermoplastic synthetic resin film is laminated on the upper surface of the [high m.p.] first thermoplastic synthetic resin film which is unexpanded even by heating treatment, said [high m.p.] first thermoplastic synthetic resin film, in turn, being laminated on the inner wall surface of the base paper for the bottom wall of the insulating paper container, and the [low m.p.] second thermoplastic synthetic resin film laminated on the base paper for the container body of the insulating paper container is expanded by subjecting the lamination to heating.

61. (Amended) The insulating paper container according to claim 46, wherein the [low m.p.] second thermoplastic synthetic resin film is laminated on the upper surface of the [high m.p.] first thermoplastic synthetic resin film which is unexpanded even by heating treatment, said [high m.p.] first thermoplastic synthetic resin film, in turn, being laminated on the inner wall surface of the base paper for the bottom wall of the insulating paper container, and the [low m.p.] second thermoplastic synthetic resin film laminated on the base paper for the container body of the insulating paper container is expanded by subjecting the lamination to heating.

62. (Amended) The insulating paper container according to claim 47, wherein the [low m.p.] second thermoplastic synthetic resin film is laminated on the upper surface of the [high m.p.] first thermoplastic synthetic resin film which is unexpanded even by heating treatment, said [high m.p.] first thermoplastic synthetic resin film, in turn, being laminated on the inner wall surface of the base paper for the bottom wall of the insulating paper container, and the [low m.p.] second thermoplastic synthetic resin film laminated on the base paper for the container body of the insulating paper container is expanded by subjecting the lamination to heating.

63. (Amended) The insulating paper container according to claim 48, wherein the [low m.p.] second thermoplastic synthetic resin film is laminated on the upper surface of the [high m.p.] first thermoplastic synthetic resin film which is unexpanded even by heating treatment, said [high m.p.] first thermoplastic synthetic resin film, in turn, being laminated on the inner wall surface of the base paper for the bottom wall of the insulating paper container, and the [low m.p.] second thermoplastic synthetic resin film laminated on the base paper for the container body of the insulating paper container is expanded by subjecting the lamination to heating.

64. (Amended) The insulating paper container according to claim 51, wherein the [low m.p.] second thermoplastic synthetic resin film is laminated on the upper surface of the [high m.p.] first thermoplastic synthetic resin film which is unexpanded even by heating treatment, said [high m.p.] first thermoplastic synthetic resin film, in turn, being laminated on the inner wall surface of the base paper for the bottom wall of the insulating paper container, and the [low m.p.] second thermoplastic synthetic resin film laminated on the base paper for the container body of the insulating paper container is expanded by subjecting the lamination to heating.

65. (Amended) The insulating paper container according to claim 55, wherein the [low m.p.] second thermoplastic synthetic resin film is laminated on the upper surface of the [high m.p.] second thermoplastic synthetic resin film which is unexpanded even by heating treatment, said

[high m.p.] first thermoplastic synthetic resin film, in turn, being laminated on the inner wall surface of the base paper for the bottom wall of the insulating paper container, and the [low m.p.] second thermoplastic synthetic resin film laminated on the base paper for the container body of the insulating paper container is expanded by subjecting the lamination to heating.

66. (Amended) The insulating paper container according to claim 45, wherein the [low m.p.] second thermoplastic synthetic resin film is expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 - 15 g/10 min and a thickness of 0.03 - 0.07 mm.

67. (Amended) The insulating paper container according to claim 46, wherein the [low m.p.] second thermoplastic synthetic resin film is expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 - 15 g/10 min and a thickness of 0.03 - 0.07 mm.

68. (Amended) The insulating paper container according to claim 47, wherein the [low m.p.] second thermoplastic synthetic resin film is expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 - 15 g/10 min and a thickness of 0.03 - 0.07 mm.

69. (Amended) The insulating paper container according to claim 48, wherein the [low m.p.] second thermoplastic synthetic resin film is expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 - 15 g/10 min and a thickness of 0.03 - 0.07 mm.

70. (Amended) The insulating paper container according to claim 51, wherein the [low m.p.] second thermoplastic synthetic resin film is expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 – 15 g/10 min and a thickness of 0.03 - 0.07 mm.

71. (Amended) The insulating paper container according to claim 55, wherein the [low m.p.] second thermoplastic synthetic resin film is expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 – 15 g/10 min and a thickness of 0.03 - 0.07 mm.

72. (Amended) The insulating paper container according to claim 60, wherein the [low m.p.] second thermoplastic synthetic resin film is expandable by heating treatment is made of low density polyethylene having a MFR (melt flow rate) of 8 – 15 g/10 min and a thickness of 0.03 - 0.07 mm.

73. (Twice Amended) The insulating paper container according to claim 45, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

74. (Twice Amended) The insulating paper container according to claim 46, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

75. (Twice Amended) The insulating paper container according to claim 47, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

76. (Twice Amended) The insulating paper container according to claim 48, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

77. (Twice Amended) The insulating paper container according to claim 51, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

78. (Twice Amended) The insulating paper container according to claim 55, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

79. (Twice Amended) The insulating paper container according to claim 60, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.

80. (Twice Amended) The insulating paper container according to claim 66, wherein the [high m.p.] first thermoplastic synthetic resin film being unexpanded by heating treatment is made of medium polyethylene having a MFR (melt flow rate) of 4 - 8 g/10 min.